

Chas

**BRIEF
PASSENGER
CAR
DATA**

—1951—



ETHYL CORPORATION



BRIEF PASSENGER CAR DATA

1951

ETHYL CORPORATION

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INDEX

	Page
Notice Page and General Notes.....	5
List of Abbreviations.....	6
Summary of Characteristics.....	7
Buick	8
Buick	9
Cadillac	10
Cadillac	11
Chrysler	12
Chrysler	13
Chevrolet	14
Crosley	15
DeSoto-Dodge	16
Ford	17
Spark Plug Heat Range Comparisons.....	18
Spark Plug Heat Range Comparisons.....	19
Hudson	20
Hudson	21
Henry J	22
Kaiser-Frazer	23
Lincoln-Mercury	24
Nash	25
Oldsmobile	26
Packard	27
Plymouth	28
Pontiac	29
Studebaker	30
Willys	31
Trend in Antiknock Quality, Regular Gasoline....	32
Trend in Antiknock Quality, Premium Gasoline... 33	
Trends in Passenger Car Engine Design.....	34

NOTICE

The specifications and adjustments contained in this booklet have been compiled by the Technical Service Division of the Research Laboratories of the Ethyl Corporation from information supplied by manufacturers of motor cars, ignition apparatus, spark plugs, etc. None of this information represents the results of tests at the Research Laboratories of the Ethyl Corporation.

This information covers the essential characteristics, in ready reference form, of the 1951 passenger car models. It is correct at date of publication, but changes may be made from time to time by motor car manufacturers.

Data on horsepower, torque, compression pressure, etc., are that given by the manufacturer. Methods and technique of testing differ in various engineering departments, so these data are frequently not comparable for different makes of cars.

GENERAL NOTES

Valves

Valve tappet clearances are extremely important. Frequent checking of valve tappet clearances will add materially to the proper functioning and long life of valves. Clearances given on the specification sheets are for normal driving conditions. For heavy duty, such as heavy loads or high speed, it may be desirable to give additional clearance.

Spark Plugs

The spark plug installed and recommended by the factory is shown first in the specifications with the corresponding AC, Auto-Lite or Champion spark plug shown as an alternate. These plugs are designed for average driving conditions. For heavy duty, high speed or long distance driving, it may be necessary to use a colder plug in order to obtain satisfactory spark plug life. The necessity for a colder plug is indicated by rapid electrode wear, blistering of the insulator tip, a very light colored deposit and, in extreme cases, splitting and cracking away of the insulator.

It will seldom be found necessary to change to a plug which is hotter than the factory equipment plug, although very light service may require such a plug. If an engine is not pumping oil and the ignition system is in good shape but the spark plug consistently fouls with excessive carbon deposit — the need for a hotter plug is indicated.

Periodic cleaning of spark plugs by means of an efficient spark plug cleaner is often advantageous.

Spark plug gaps should be set and maintained at factory setting—pitted points should be cleaned and, if badly pitted, replaced. Incorrectly set breaker points will affect ignition timing.

Ignition Timing

Ignition timing is given in crankshaft degrees and is factory setting. Almost all distributors are provided with some type of calibration enabling the ignition timing to be reset without disturbing the initial distributor setting. Retarded ignition timing will eliminate or reduce detonation but will result in decreased performance and fuel economy. Also, in most cases, an ignition setting somewhat in advance of the factory setting will result in additional performance and economy, although such an ignition setting will require a fuel of higher antiknock value than the standard setting.

Carburetors

Carburetors should not be adjusted or jets changed except by qualified mechanics. Correct fuel (or float) levels are extremely important to satisfactory performance and fuel economy — factory specifications should be strictly maintained.

LIST OF ABBREVIATIONS

AA	Aluminum Alloy (cylinder heads & pistons)
AC	AC Spark Plug Division, GMC
Adv	Advance
AI	Aluminum Industries (valves)
AL	The Electric Auto-Lite Company
AMA	Automobile Manufacturers Association
ATC	After Top Center
Auto Adj	Automatic Adjusters
BTC	Before Top Center
Bmep	Brake mean effective pressure
C	Cold (valve adjustment)
Car	Carter (carburetors)
Centrif	Centrifugal
Champ	Champion Spark Plug Company
Clr	Clearance
CNA	Chrome Nickel Alloy Iron
Comp Press	Compression Pressure
Cr Sp	Cranking Speed
DD	Downdraft
Deg	Degrees
Dup	Duplex
Eaton	Eaton Mfg. Company (valves)
Eng	Engine
Eqpt	Equipment
Exh	Exhaust
F	F-head
H	Hot (valve adjustment)
HP	Horsepower
Hyp	Hypoid (rear axle gearing)
I	In-head (overhead valves)
Int	Intake
L	L-head
Max	Maximum
No. Cyl	Number of cylinders
OD	Overdrive
Recm Press	Recommended Pressure (tires)
Rich	Rich Manufacturing Company (valves)
RP	Rochester Products (carburetors)
SB	Spiral Bevel
Sil	Silchrome
Sgl	Single
Std	Standard
Strom	Stromberg Carburetor Company
TDC	Top Dead Center
TP	Thompson Products, Inc. (valves)
Trans	Transmission
Vac	Vacuum

1951 PASSENGER CARS

7

BUICK

CAR MODEL	Series 40 Synchronesh	Series 40 Dynaflow
ENGINE		
No. Cyl-Head Type.....	8-1	8-1
Bore & Stroke (in).....	3-3/16x4-1/8	3-3/16x4-1/8
Displacement (cu in).....	263.3	263.3
AMA Horsepower.....	32.51	32.51
Max Horsepower @ rpm.....	120 @ 3600	128 @ 3600
Max Torque, lb-ft @ rpm.....	217 @ 2000	225 @ 2000
Max bmep, lb/sq in.....	124.3	129.0
Head Material.....	Cast Iron	Cast Iron
Compression Ratio.....	6.60	7.20
Comp Press, lb/sq in @ rpm.....	114 @ 90	120 @ 90
Piston Material.....	AA	AA
Bearing Material.....		Steel Backed Durex
IGNITION		
Spark Plug—Factory Eqpt.....	AC 46X	AC 46X
Alternate.....		Champ J-12, AL A9
Spark Plug Gap.....	.025"	.025"
Breaker Gap.....	.015"	.015"
Cam Angle.....		
Firing Order.....	1-6-2-5-8-3-7-4	1-6-2-5-8-3-7-4
Timing—Crankshaft Degrees....	4° BTC	4° BTC
Adv Deg—Centrif—Vac.....	24-11	24-11
Adv Begins—Ends—Eng rpm ...	400-3000	400-3000
VALVES		
Make & Material.....	Int Exh TP or Eaton or Rich 3140	TP or Eaton or Rich 3140
Tappet Clr—Seat Angle.....	Int .015" H, 45°	TP or Eaton or Rich XCR or 2112N
	Exh .015" H, 45°	Hydraulic Lifters, 45°
Exhaust Seat Inserts.....	None	Hydraulic Lifters, 45°
		None
CARBURETOR		
Make, Model.....	(1)	(1)
Size, Type.....	1-1/8" Dual DD	1-1/8" Dual DD
Float Level.....	(2)	(2)
Choke Control.....	Automatic	Automatic
ENGINE LUBRICATION		
Oil—Summer—Winter—SAE		See Buick Instruction Book
Normal Oil Press—lb @ mph....	35 @ 35	35 @ 35
Oil Filter—Make.....	AC	AC
CAPACITY		
Oil.....(qt)	5-1/2 (3)	5-1/2 (3)
Water.....(qt)	12 (4)	13-1/2 (4)
Transmission.....(pt)	1-3/8	(5)
Rear Axle.....(pt)	4	4
Gasoline.....(gal)	19	19
GENERAL DATA (5 Passenger Sedan)		
Wheelbase.....(in)	121-1/2	121-1/2
Over-all Lgth Incl Bumpers. (in)	204-3/4	204-3/4
Shipping Weight.....(lb)	3605	3703
Tire Size—Recm Press.....(lb)	7.60x15-24-24	7.60x15-24-24
Rear Axle Ratio—Type.....	3.9 (6)	3.6 (7)
LOCATION CHASSIS SERIAL NO. Inside Left Front Windshield Pillar Post		

- (1) Stromberg AAUVB-267 or Carter WCD-725-SA.
- (2) Upon removal of sight plug with engine idling, fuel level should be just high enough to wet threads at lower side of inspection hole.
- (3) Add 1½ quarts for dry oil filter.
- (4) Add 1½ quarts for heater.
- (5) Dynaflow requires 8½ quarts for refill—plus 1¼ pints if completely dry.
- (6) 3.6 optional.
- (7) 3.9 optional.

BUICK

CAR MODEL	Series 50 Synchromesh	Series 50 Dynaflow	Series 70 Dynaflow
ENGINE			
No. Cyl-Head Type.....	8-I	8-I	8-I
Bore & Stroke (in).....	3-3/16x4-3/8	3-3/16x4-3/8	3-7/16x4-5/16
Displacement (cu in).....	263.3	263.3	320.2
AMA Horsepower.....	32.51	32.51	37.81
Max Horsepower @ rpm.....	124 @ 3600	128 @ 3600	152 @ 3600
Max Torque, lb-ft @ rpm.....	220 @ 2000	225 @ 2000	280 @ 2000
Max bmep, lb/sq in.....	126.2	129.0	131.8
Head Material.....	Cast Iron	Cast Iron	Cast Iron
Compression Ratio.....	6.90	7.20	7.20
Comp Press, lb/sq in @ rpm.....	118 @ 90	120 @ 90	120 @ 90
Piston Material.....	AA	AA	AA
Bearing Material.....		Steel Backed Durex	
IGNITION			
Spark Plug—Factory Eqpt.....	AC 46X	AC 46X	AC 46X
Alternate.....		Champ J-12, AL	A9
Spark Plug Gap.....	.025"	.025"	.025"
Breaker Gap.....	.015"	.015"	.015"
Cam Angle.....			
Firing Order.....		1-6-2-5-8-3-7-4	
Timing—Crankshaft Degrees.....	4° BTC	4° BTC	6° BTC
Adv Deg—Centrif—Vac.....	24-11	24-11	24-11
Adv Begins—Ends—Eng rpm ...	400-3000	400-3000	400-3000
VALVES			
Make & Material.....	Int Exh	TP or Eaton or Rich 3140 TP or Eaton or Rich XCR or 2112N	
Tappet Clr—Seat Angle.....	Int Exh	Hydraulic Lifters, 45° Hydraulic Lifters, 45°	
Exhaust Seat Inserts.....	None	None	None
CARBURETOR			
Make, Model.....	(1)	(1)	(2)
Size, Type.....	1-1/8" Dual DD		1-1/4" Dual DD
Float Level.....	(3)	(3)	(3)
Choke Control.....	Automatic	Automatic	Automatic
ENGINE LUBRICATION			
Oil—Summer—Winter—SAE		See Buick Instruction Book	
Normal Oil Press—lb @ mph....	35 @ 35	35 @ 35	35 @ 35
Oil Filter—Make.....	AC	AC	AC
CAPACITY			
Oil.....(qt)	5-1/2 (4)	5-1/2 (4)	7 (4)
Water.....(qt)	12 (5)	13-1/2 (5)	18 (5)
Transmission.....(pt)	1-3/8	(6)	(7)
Rear Axle.....(pt)	4	4	4
Gasoline.....(gal)	19	19	19
GENERAL DATA (5 Passenger Sedan)			
Wheelbase.....(in)	121-1/2	121-1/2	126-1/4
Over-all Lgth Incl Bumpers.....(in)	206-1/4	206-1/4	211
Shipping Weight.....(lb)	3755	3853	4240
Tire Size—Recm Press.....(lb)	7.60x15-24-24	7.60x15-24-24	8.00x15-24-24
Rear Axle Ratio—Type.....	3.9 (8)	3.6 (9)	3.9 (8)
LOCATION CHASSIS SERIAL NO. Inside Left Front Windshield Pillar Post			
(1) Stromberg AAUVB-267 or Carter WCD-725-SA.			
(2) Stromberg AAVB-267 or Carter WCD-726-SA.			
(3) Upon removal of sight plug with engine idling, fuel level should be just high enough to wet threads at lower side of inspection hole.			
(4) Add 1½ quarts for dry oil filter.			
(5) Add 1½ quarts for heater.			
(6) Dynaflow requires 8½ quarts for refill—plus 1¾ pints if completely dry.			
(7) Dynaflow requires 10 quarts for refill—plus 1¾ pints if completely dry.			
(8) 3.6 optional.			
(9) 3.9 optional.			

CADILLAC

CAR MODEL	61	62
ENGINE		
No. Cyl-Head Type.....	V-8-I	V-8-I
Bore & Stroke (in).....	3-13/16x3-5/8	3-13/16x3-5/8
Displacement (cu in).....	331	331
AMA Horsepower.....	46.5	46.5
Max Horsepower @ rpm.....	160 @ 3800	160 @ 3800
Max Torque, lb-ft @ rpm.....	312 @ 1800	312 @ 1800
Max bmep, lb/sq in.....	142.0	142.0
Head Material.....	Cast Iron	Cast Iron
Compression Ratio.....	7.5	7.5
Comp Press, lb/sq in @ rpm.....	194 @ 1000	194 @ 1000
Piston Material.....	AA	AA
Bearing Material.....		Steel Backed Durex
IGNITION		
Spark Plug—Factory Eqpt.....	AC 48-X	AC 48-X
Alternate.....		Champ J-11, AL A9
Spark Plug Gap.....	.035"	.035"
Breaker Gap.....	.013" to .018"	.013" to .018"
Cam Angle.....	31° ± 1-1/2°	31° ± 1-1/2°
Firing Order.....	1-8-4-3-6-5-7-2	1-8-4-3-6-5-7-2
Timing—Crankshaft Degrees....	5° BTC	5° BTC
Adv Deg—Centrif—Vac.....	30-20	30-20
Adv Begins—Ends—Eng rpm...	600-3600	600-3600
VALVES		
Make & Material.....	Int Rich 3140 Exh Rich N82120	Rich 3140 Rich N82120
Tappet Ctr—Seat Angle.....	Int Automatic Adjusters, 44° Exh Automatic Adjusters, 44°	Automatic Adjusters, 44° Automatic Adjusters, 44°
Exhaust Seat Inserts.....	None	None
CARBURETOR		
Make, Model.....	Rochester BB or Carter WCD-845-S	
Size, Type.....	1-1/4" Dual DD	1-1/4" Dual DD
Float Level.....	(1)	(1)
Choke Control.....	Automatic	Automatic
ENGINE LUBRICATION		
Oil—Summer—Winter—SAE....	See Cadillac Instruction Book	
Normal Oil Press—lb @ mph....	28 @ 30	28 @ 30
Oil Filter—Make.....	None	None
CAPACITY		
Oil.....(qt)	5	5
Water.....(qt)	18 (2)	18 (2)
Transmission.....(pt)	3-3/4 (3)	(4)
Rear Axle.....(pt)	5	5
Gasoline.....(gal)	20	20
GENERAL DATA (5 Passenger Sedan)		
Wheelbase.....(in)	122	126
Over-all Lgth Incl Bumpers. (in)	211-1/2	215-1/2
Shipping Weight.....(lb)	3839 (5)	3983
Tire Size—Recm Press.....(lb)	7.60x15-24-24	8.00x15-24-24
Rear Axle Ratio—Type.....	3.36	3.36

LOCATION CHASSIS SERIAL NO. Right Frame Sidebar, Behind Engine Bracket

- (1) Carter WCD-845-S—11/64" measured between machined surface of float chamber cover and nearest point on float. Information covering Rochester not available at time this booklet went to press.
- (2) One quart additional for heater.
- (3) 2-1/2 pints for refill. Hydra-Matic requires 10-1/2 quarts for refill, 12 quarts dry.
- (4) Hydra-Matic requires 10-1/2 quarts for refill, 12 quarts dry.
- (5) Add 78 pounds when equipped with Hydra-Matic.

CAR MODEL	60	75
ENGINE		
No. Cyl-Head Type.....	V-8-I	V-8-I
Bore & Stroke (in).....	3-13/16x3-5/8	3-13/16x3-5/8
Displacement (cu in).....	331	331
AMA Horsepower.....	46.5	46.5
Max Horsepower @ rpm.....	160 @ 3800	160 @ 3800
Max Torque, lb-ft @ rpm.....	312 @ 1800	312 @ 1800
Max bmep, lb/sq in.....	142.0	142.0
Head Material.....	Cast Iron	Cast Iron
Compression Ratio.....	7.5	7.5
Comp Press, lb/sq in @ rpm.....	194 @ 1000	194 @ 1000
Piston Material.....	AA	AA
Bearing Material.....		Steel Backed Durex
IGNITION		
Spark Plug—Factory Eqpt.....	AC 48-X	AC 48-X
Alternate.....		Champ J-11, AL A9
Spark Plug Gap.....	.035"	.035"
Breaker Gap.....	.013" to .018"	.013" to .018"
Cam Angle.....	31° ± 1-1/2°	31° ± 1-1/2°
Firing Order.....	1-8-4-3-6-5-7-2	1-8-4-3-6-5-7-2
Timing—Crankshaft Degrees.....	5° BTC	5° BTC
Adv Deg—Centrif—Vac.....	30-20	30-20
Adv Begins—Ends—Eng rpm ...	600-3600	600-3600
VALVES		
Make & Material.....	Int Rich 3140	Rich 3140
	Exh Rich N82120	Rich N82120
Tappet Clr—Seat Angle.....	Int Automatic Adjusters, 44°	Automatic Adjusters, 44°
	Exh Automatic Adjusters, 44°	Automatic Adjusters, 44°
Exhaust Seat Inserts.....	None	None
CARBURETOR		
Make, Model.....	Rochester BB or Carter WCD-845-S	
Size, Type.....	1-1/4" Dual DD	1-1/4" Dual DD
Float Level.....	(1)	(1)
Choke Control.....	Automatic	Automatic
ENGINE LUBRICATION		
Oil—Summer—Winter—SAE	See Cadillac Instruction Book	
Normal Oil Press—lb @ mph....	28 @ 30	28 @ 30
Oil Filter—Make.....	None	None
CAPACITY		
Oil.....(qt)	5	5
Water.....(qt)	18 (2)	18 (2)
Transmission.....(pt)	(3)	3-3/4 (4)
Rear Axle.....(pt)	5	5
Gasoline.....(gal)	20	20
GENERAL DATA (5 Passenger Sedan)		
Wheelbase.....(in)	130	146-3/4
Over-all Lgth Incl Bumpers. (in)	224-1/2	236-1/4
Shipping Weight.....(lb)	4155	4622 (5)
Tire Size—Recm Press.....(lb)	8.00x15-24-24	8.20x15-28-28
Rear Axle Ratio—Type.....	3.36	4.27 (6)
LOCATION CHASSIS SERIAL NO. Right Frame Sidebar, Behind Engine Bracket		
(1) Carter WCD-845-S—11/64" measured between machined surface of float chamber cover and nearest point on float. Information covering Rochester not available at time this booklet went to press.		
(2) One quart additional for heater.		
(3) Hydra-Matic requires 10-1/2 quarts for refill, 12 quarts dry.		
(4) 2-1/2 pints for refill. Hydra-Matic requires 10-1/2 quarts for refill, 12 quarts dry.		
(5) Add 78 pounds when equipped with Hydra-Matic.		
(6) 3.77 when equipped with Hydra-Matic.		

CHRYSLER

CAR MODEL	Windsor C-51	New Yorker C-52
ENGINE		
No. Cyl-Head Type.....	6-L	V-8-I
Bore & Stroke (in).....	3-7/16x4-1/2	3-13/16x3-5/8
Displacement (cu in).....	250.6	331.1
AMA Horsepower.....	28.36	46.5
Max Horsepower @ rpm.....	116 @ 3600	180 @ 4000
Max Torque, lb-ft @ rpm.....	208 @ 1600	312 @ 2000
Max bmep, lb/sq in.....	125.0	142.0
Head Material.....	Cast Iron	Cast Iron
Compression Ratio.....	7.00	7.5
Comp Press, lb/sq in @ rpm....	120 to 150 @ 150	135 to 165 @ 150
Piston Material.....	AA	AA
Bearing Material.....	Steel Backed Babbitt	
IGNITION		
Spark Plug—Factory Eqpt.....	AL AR8	AL 4S-165
Alternate.....	AC 46-5, Champ J-8	
Spark Plug Gap.....	.035"	.035"
Breaker Gap.....	.020"	.015" to .018"
Cam Angle.....	34-1/2° to 38°	34° to 36° (1)
Firing Order.....	1-5-3-6-2-4	1-8-4-3-6-5-7-2
Timing—Crankshaft Degrees....	2° BTC	TDC
Adv Deg—Centrif—Vac.....	22-20	29-25
Adv Begins—Ends—Eng rpm....	700-2850	700-3400
VALVES		
Make & Material.....	Int Exh	Silicon-Chromium Steel Silicon-Chromium Steel
Tappet Clr—Seat Angle.....	Int .008" H, 45° Exh .010" H, 45°	Auto Adj, 45° Auto Adj, 45°
Exhaust Seat Inserts.....	Yes	Yes
CARBURETOR		
Make, Model.....	Ball & Ball (Car)	Carter WCD-8305
Size, Type.....	1-1/2" Sgl DD	1-1/4" Dual DD
Float Level.....	5/64" (2)	11/64" (3)
Choke Control.....	Automatic	Automatic
ENGINE LUBRICATION		
Oil—Summer—Winter—SAE.....	See Chrysler Instruction Book	
Normal Oil Press—lb @ mph....	40 to 50 @ 20	55 to 65 @ 20
Oil Filter—Make.....	MoPar	MoPar
CAPACITY		
Oil.....(qt)	5	5
Water.....(qt)	15	25
Transmission.....(pt)	2-3/4 (4)	3 (5)
Rear Axle.....(pt)	3-1/4	3-1/2
Gasoline.....(gal)	17	20
GENERAL DATA (5 Passenger Sedan)		
Wheelbase.....(in)	125-1/2	131-1/2
Over-all Lgth Incl Bumpers.....(in)	207-1/4	213-1/4
Shipping Weight.....(lb)	3665	4260
Tire Size—Recm Press.....(lb)	7.60x15-24-24	8.20x15-24-24
Rear Axle Ratio—Type.....	3.9	3.73 (6)
LOCATION CHASSIS SERIAL NO. Left Front Door Body Hinge Post		
(1) Two-breaker distributor; 27-1/2° to 30° dwell for each breaker.		
(2) From top of float chamber to top of float.		
(3) Between machined surface of float chamber cover and nearest point on float.		
(4) 3 pints refill when equipped with the "Fluid-Matic" drive.		
(5) If equipped with torque converter, torque converter unit capacity 10-1/2 qts.		
(6) 3.54 when equipped with torque converter.		

CHRYSLER

CAR MODEL	Imperial C-54	Crown Imperial C-53
ENGINE		
No. Cyl-Head Type.....	V-8-I	V-8-I
Bore & Stroke (in).....	3-13/16x3-5/8	3-13/16x3-5/8
Displacement (cu in).....	331.1	331.1
AMA Horsepower.....	46.5	46.5
Max Horsepower @ rpm.....	180 @ 4000	180 @ 4000
Max Torque, lb-ft @ rpm.....	312 @ 2000	312 @ 2000
Max bmep, lb/sq in.....	142.0	142.0
Head Material.....	Cast Iron	Cast Iron
Compression Ratio.....	7.5	7.5
Comp Press, lb/sq in @ rpm....	135 to 165 @ 150	135 to 165 @ 150
Piston Material.....	AA	AA
Bearing Material.....	Steel Backed Babbitt	
IGNITION		
Spark Plug—Factory Eqpt.....	AL 4S-165	AL 4S-165
Alternate.....		
Spark Plug Gap.....	.035"	.035"
Breaker Gap.....	.015" to .018"	.015" to .018"
Cam Angle.....	34° to 36° (1)	34° to 36° (1)
Firing Order.....	1-8-4-3-6-5-7-2	1-8-4-3-6-5-7-2
Timing—Crankshaft Degrees....	TDC	TDC
Adv Deg—Centrif—Vac.....	29-25	29-25
Adv Begins—Ends—Eng rpm....	700-3400	700-3400
VALVES		
Make & Material.....	Int Exh	Silicon-Chromium Steel Silicon-Chromium Steel
Tappet Clr—Seat Angle.....	Int Exh	Automatic Adjusters—45° Automatic Adjusters—45°
Exhaust Seat Inserts.....	Yes	Yes
CARBURETOR		
Make, Model.....	Carter WCD-8305	Carter WCD-8305
Size, Type.....	1-1/4" Dual DD	1-1/4" Dual DD
Float Level.....	11/64" (2)	11/64" (2)
Choke Control.....	Automatic	Automatic
ENGINE LUBRICATION		
Oil—Summer—Winter—SAE....	See Chrysler Instruction Book	
Normal Oil Press—lb @ mph....	55 to 65 @ 20	55 to 65 @ 20
Oil Filter—Make.....	MoPar	MoPar
CAPACITY		
Oil.....	(qt) 5	5
Water.....	(qt) 25	25
Transmission.....	(pt) 3 (3)	3 (4)
Rear Axle.....	(pt) 3-1/2	5
Gasoline.....	(gal) 20	20
GENERAL DATA (5 Passenger Sedan)		
Wheelbase.....	(in) 131-1/2	145-1/2
Over-all Lgth Incl Bumpers. (in)	212-5/8	229-1/2
Shipping Weight.....	(lb) 4350	(5)
Tire Size—Recm Press.....	(lb) 8.20x15-24-24	8.90x15-24-24
Rear Axle Ratio—Type.....	3.73 (6)	3.54

LOCATION CHASSIS SERIAL NO. Left Front Door Body Hinge Post

- (1) Two-breaker distributor: 27½° to 30° dwell for each breaker.
- (2) Between machined surface of float chamber cover and nearest point on float.
- (3) If equipped with torque converter, torque converter unit capacity 10½ qts.
- (4) Torque converter capacity 10½ quarts.
- (5) Not available on date this booklet went to press.
- (6) 3.54 when equipped with torque converter.

CHEVROLET

CAR MODEL	Special & Deluxe Styleline & Fleetline SYNCHROMESH	Deluxe Styleline & Fleetline POWERGLIDE
ENGINE		
No. Cyl-Head Type.....	6-I	6-I
Bore & Stroke (in).....	3-1/2x3-3/4	3-9/16x3-15/16
Displacement (cu in).....	216.5	235.5
AMA Horsepower.....	29.4	30.4
Max Horsepower @ rpm.....	92 @ 3400	105 @ 3600
Max Torque, lb-ft @ rpm.....	176 @ 1000-2000	193 @ 1100-2200
Max bmep, lb/sq in.....	122.5	123.8
Head Material.....	Cast Alloy Iron	Cast Alloy Iron
Compression Ratio.....	6.6 (1)	6.7 (1)
Comp Press, lb/sq in @ rpm.....	110 @ 125 (engine hot)	
Piston Material.....	Cast Alloy Iron	Cast Alloy Iron
Bearing Material (main).....	Steel-Backed Thin Wall Babbitt	
IGNITION		
Spark Plug—Factory Eqpt.....	AC 46-5	AC 46-5
Alternate.....	(2)	(2)
Spark Plug Gap.....	.035"	.035"
Breaker Gap.....	.018" to .024"	.018" to .024"
Cam Angle.....	34°	34°
Firing Order.....	1-5-3-6-2-4	1-5-3-6-2-4
Timing—Crankshaft Degrees....	5° BTC	5° BTC
Adv Deg—Centrif—Vac.....	32.5 to 39.5-20	29 to 33-20
Adv Begins—Ends—Eng rpm....	650-3450	600-3700
VALVES		
Make & Material.....	Int Silichrome or Nickel Chrome Steel	Silichrome Steel
	Exh Silichrome Steel	Silichrome Steel
Tappet Clr—Seat Angle.....	Int .006" H, 30°	Auto Adj, 30°
	Exh .013" H, 45°	Auto Adj, 45°
Exhaust Seat Inserts.....	None	None
CARBURETOR		
Make, Model.....	RP 7003152	RP 7003160
Size, Type.....	1-7/32" Sgl DD	1-11/32" Sgl DD
Float Level.....	1-5/16" (3)	1-5/16" (3)
Choke Control.....	Manual	Manual
ENGINE LUBRICATION		
Oil—Summer—Winter—SAE.....	See Chevrolet Instruction Book	
Normal Oil Press—lb @ mph....	14 @ 39 MPH	14 @ 2000 rpm
Oil Filter—Make.....	None	None
CAPACITY		
Oil.....(qt)	5-1/2 (4)	5-1/2 (4)
Water.....(qt)	15	15
Transmission.....(pt)	1-1/2	9 qt (refill)
Rear Axle.....(pt)	3-1/2	3-1/2
Gasoline.....(gal)	16	16
GENERAL DATA (5 Passenger Sedan)		
Wheelbase.....(in)	115	115
Over-all Lgth Incl Bumpers.(in)	197-13/16	197-13/16
Shipping Weight.....(lb)	3130	(5)
Tire Size—Recm Press.....(lb)	6.70x15-24-24	6.70x15-24-24
Rear Axle Ratio—Type.....	4.11 Hyp	3.55 Hyp
LOCATION CHASSIS SERIAL NO. Left Front Body Hinge Pillar		
(1) No optional compression ratio.		
(2) Champion's recommendation is J-11; Auto-Lite's is A9.		
(3) From cover surface to bottom of float.		
(4) 5 quarts for refill.		
(5) Styleline Deluxe—Powerglide—3275.		
Fleetline Deluxe—Powerglide—3285.		

CROSLEY

CAR MODEL	CD	Hotshot & Super Sports—VC
ENGINE		
No. Cyl-Head Type.....	4-I	4-I
Bore & Stroke (in).....	2-1/2x2-1/4	2-1/2x2-1/4
Displacement (cu in).....	44	44
AMA Horsepower.....	10	10
Max Horsepower @ rpm.....	25.5 @ 5200	25.5 @ 5200
Max Torque, lb-ft @ rpm.....	32.5 @ 3000	32.5 @ 3000
Max bmep, lb/sq in.....	111.3	111.3
Head Material.....	Cast Iron	Cast Iron
Compression Ratio.....	8.00	8.00 (1)
Comp Press, lb/sq in @ rpm.....	125 to 135 @ 260	125 to 135 @ 260
Piston Material.....	AA	AA
Bearing Material.....	Steel Backed Babbitt	
IGNITION		
Spark Plug—Factory Eqpt.....	Champ J-8	Champ J-8
Alternate.....		AL AN7, AC 45
Spark Plug Gap.....	.025"	.025"
Breaker Gap.....	.020"	.020"
Cam Angle.....	46°	46°
Firing Order.....	1-3-4-2	1-3-4-2
Timing—Crankshaft Degrees....	12° BTC	12° BTC
Adv Deg—Centrif—Vac.....	34-0	34-0
Adv Begins—Ends—Eng rpm ...	800-3000	800-3000
VALVES		
Make & Material.....	Int 3140	3140
	Exh 2112N	2112N
Tappet Clr—Seat Angle.....	Int .004"—.006" C, 45°	.004"—.006" C, 45°
	Exh .007"—.009" C, 45°	.007"—.009" C, 45°
Exhaust Seat Inserts.....	None	None
CARBURETOR		
Make, Model.....	Tillotson DY9C	Tillotson DY9C
Size, Type.....	7/8" Sgl DD	7/8" Sgl DD
Float Level.....	1-27/64" (2)	1-27/64" (2)
Choke Control.....	Manual	Manual
ENGINE LUBRICATION		
Oil—Summer—Winter—SAE	See Crosley Instruction Book	
Normal Oil Press—lb @ mph....	35 to 50 @ 30	35 to 50 @ 30
Oil Filter—Make.....	Fram	Fram
CAPACITY		
Oil.....	(qt) 2 (3)	2 (3)
Water.....	(qt) 4	4
Transmission.....	(pt) 1	1
Rear Axle.....	(pt) 1-1/2	1-1/2
Gasoline.....	(gal) 6-1/2	6-1/2
GENERAL DATA (5 Passenger Sedan)		
Wheelbase.....	(in) 80	85
Over-all Lgth Incl Bumpers. (in)	148	137
Shipping Weight.....	(lb) 1370	1180
Tire Size—Recm Press.....	(lb) 4.50x12-25-25	4.50x12-25-25
Rear Axle Ratio—Type.....	5.17 SB	5.17 SB
LOCATION CHASSIS SERIAL NO.		
Left Center Firewall Under Hood		

(1) 10.00 optional.

(2) From face of body gasket to top of raised seam encircling float—with upper body upside down.

(3) 3 quarts with oil filter.

DESOTO-DODGE

CAR MODEL	DeSoto S-15	Dodge D-41	Dodge D-42
ENGINE			
No. Cyl-Head Type.....	6-L	6-L	6-L
Bore & Stroke (in).....	3-7/16x4-1/2	3-1/4x4-5/8	3-1/4x4-5/8
Displacement (cu in).....	250.6	230.2	230.2
AMA Horsepower.....	28.36	25.35	25.35
Max Horsepower @ rpm.....	116 @ 3600	103 @ 3600	103 @ 3600
Max Torque, lb-ft @ rpm.....	208 @ 1600	190 @ 1200	190 @ 1200
Max bmep, lb/sq in.....	125.0	127.5	127.5
Head Material.....	Cast Iron	Cast Iron	Cast Iron
Compression Ratio.....	7.00	7.00	7.00
Comp Press, lb/sq in @ rpm....	120-150 @ 150	120-150 @ 150	120-150 @ 150
Piston Material.....	AA	AA	AA
Bearing Material.....		Steel Backed Babbitt	
IGNITION			
Spark Plug—Factory Eqpt.....	AL AR8	AL AR8	AL AR8
Alternate.....		AC 46-5, Champ	J-8
Spark Plug Gap.....	.035"	.035"	.035"
Breaker Gap.....	.020"	.020"	.020"
Cam Angle.....	34-1/2° to 38°	34-1/2° to 38°	34-1/2° to 38°
Firing Order.....	1-5-3-6-2-4	1-5-3-6-2-4	1-5-3-6-2-4
Timing—Crankshaft Degrees....	2° BTC	2° BTC	2° BTC
Adv Deg—Centrif—Vac.....	22-20	22-18	22-18
Adv Begins—Ends—Eng rpm....	700-2850	700-2850	700-2850
VALVES			
Make & Material.....	Int Silicon-Chromium Steel	Various Alloy Steels	Various Alloy Steels
	Exh Silicon-Chromium Steel		
Tappet Clr—Seat Angle.....	Int .008" H, 45°	.008" H, 45°	.008" H, 45°
	Exh .010" H, 45°	.010" H, 45°	.010" H, 45°
Exhaust Seat Inserts.....	Yes	Yes	Yes
CARBURETOR			
Make, Model.....	Ball & Ball (Car)	Strom BXVD-3-93	
Size, Type.....	1-1/2" Sgl DD	1-1/2" Sgl DD	(Special)
Float Level.....	5/64" (1)	1/8" (1)	1/8" (1)
Choke Control.....	Automatic	Automatic	Automatic
ENGINE LUBRICATION			
Oil—Summer—Winter—SAE.....	See DeSoto	or Dodge Instruction Book	
Normal Oil Press—lb @ mph....	40 to 50 @ 20	40 to 50 @ 20	40 to 50 @ 20
Oil Filter—Make.....	Purolator	MoPar	MoPar
CAPACITY			
Oil.....(qt)	5	5	5
Water.....(qt)	15	14	14
Transmission.....(pt)	2-3/4 (2)	2-3/4 (3)	2-3/4 (3)
Rear Axle.....(pt)	3-1/4	3-1/4	3-1/4
Gasoline.....(gal)	17	17	17
GENERAL DATA (5 Passenger Sedan)			
Wheelbase.....(in)	125-1/2	115	123-1/2
Over-all Lgth Incl Bumpers.....(in)	208-3/8	199-7/8	206-7/8
Shipping Weight.....(lb)	3570	3215 (4)	3415
Tire Size—Recm Press.....(lb)	7.60x15-24-24	6.70x15-24-24	7.10x15-24-24
Rear Axle Ratio—Type.....	3.9 (5)	3.9 (6)	3.9
LOCATION CHASSIS SERIAL NO. Left Front Door Body Hinge Post			
(1) From top of float chamber without gasket to top center of float.			
(2) 3 pints refill when equipped with "Tip-Toe Shift" hydraulic transmission.			
(3) 3 pints when equipped with "Gyromatic" transmission.			
(4) Weight given for two-door sedan; four-door sedan not available in this model.			
(5) 3.73 optional in models equipped with "Tip-Toe Shift" hydraulic transmission.			
(6) 3.73 in 3-passenger coupe and roadster.			

CAR MODEL	Deluxe and Custom Six	Deluxe and Custom Eight
ENGINE		
No. Cyl-Head Type.....	6-L	V-8-L
Bore & Stroke (in).....	3.3x4.4	3-3/16x3-3/4
Displacement (cu in).....	225.9	239.4
AMA Horsepower.....	26.1	32.5
Max Horsepower @ rpm.....	95 @ 3300	100 @ 3600
Max Torque, lb-ft @ rpm.....	180 @ 1200	181 @ 2000
Max bmep, lb/sq in.....	120	113.6
Head Material.....	Cast Iron	Cast Iron
Compression Ratio.....	6.8	6.8
Comp Press, lb/sq in @ rpm....	90-110 @ 120	110 @ 60
Piston Material.....	AA—Steel Strut	
Bearing Material.....	Steel Backed Copper-Lead Alloy	
IGNITION		
Spark Plug—Factory Eqpt.....	Champ H-10	Champ H-10
Alternate.....		AC 45L, AL AL7
Spark Plug Gap.....	.029" to .032"	.029" to .032"
Breaker Gap.....	.024" to .026"	.014" to .016"
Cam Angle.....	35° to 38°	26° to 28-1/2°
Firing Order.....	1-5-3-6-2-4	1-5-4-8-6-3-7-2
Timing—Crankshaft Degrees....	TDC	2° BTC
Adv Deg—Centrif—Vac.....	(1)	(2)
Adv Begins—Ends—Eng rpm....		
VALVES		
Make & Material.....	Int Exh	Ford or Eaton Sil #1 Ford or Eaton Nichrome Alloy
Tappet Clr—Seat Angle.....	Int .013" to .015" C, 45° Exh .017" to .019" C, 45°	.013" to .015" C, 45° .017" to .019" C, 45°
Exhaust Seat Inserts.....	Yes	Yes
CARBURETOR		
Make, Model.....	Holley (847-FS)	Ford 8BA
Size, Type.....	1-1/4" Sgl DD	1.0" Dual DD
Float Level.....	1.322" to 1.355" (3)	1.322" to 1.355" (3)
Choke Control.....	Manual	Manual
ENGINE LUBRICATION		
Oil—Summer—Winter—SAE....	See Ford Instruction Book	
Normal Oil Press—lb @ mph....	40 to 50 @ 30 to 40	40 @ 30 to 40
Oil Filter—Make.....	Fram or Purolator	Fram
CAPACITY		
Oil.....(qt) (4)	(4)	(4)
Water.....(qt) 17.3	22	22
Transmission.....(pt) 3-1/4 (5)	3-1/4 (5)	3-1/4 (5)
Rear Axle.....(pt) 3-1/2	3-1/2	3-1/2
Gasoline.....(gal) 16	16	16
GENERAL DATA (5 Passenger Sedan)		
Wheelbase.....(in) 114	114	114
Over-all Lgth Incl Bumpers. (in) 197.3	197.3	197.3
Shipping Weight.....(lb) 3065	3093	3093
Tire Size—Recm Press.....(lb) 6.00x16-28-25 (6)	6.00x16-28-25 (6)	6.00x16-28-25 (6)
Rear Axle Ratio—Type.....	3.73 (7)	3.73 (7)
LOCATION CHASSIS SERIAL NO. Left Hand Engine Side of Dash		
(1) Full vacuum actuated distributor—maximum advance with wide open throttle at 4000 rpm is 23°—at cruising torque maximum advance is 26°.		
(2) Full vacuum actuated distributor—maximum advance with wide open throttle at 4000 rpm is 21°—at cruising torque maximum advance is 27°.		
(3) From bowl cover flange to bottom of float in closed position.		
(4) 5 quarts dry including filter—4 quarts refill.		
(5) 4 1/4 pints when equipped with overdrive (4 pints for refill with overdrive). Fordomatic requires 9 quarts.		
(6) 6.70x15-24-21 standard for Custom models, optional for Deluxe models.		
(7) 4.10 with overdrive—3.31 with automatic transmission.		

SPARK PLUG HEAT

		A Extremely Hot	B Very Hot	C Hot	D Warm
AC	10 mm	108 M8		106	
	14 mm	48 48X	47 47 Com	46-5 46X 46 46 Com	45 45L Com* 45 Com 45L*
	18 mm	88S Com 88L Com*	88 87S Com 87 Com	86 86 Com	85 Com 85S Com
	3/8"	78L Com*	77 Com 77L Com* 78 78S	76 76 Com 76S	75 Com
CHAM- PION	10 mm	Y-8		Y-6	
	14 mm	J-14	J-12	J-11 H-11*	J-8 H-10*
	18 mm	9 Com*	C-15 C-7	8 Com	7 15A
	3/8"	3 Com* 22	2 Com L*	C-4 6	
AUTO- LITE	10 mm	P6 PR6			
	14 mm	A11 AR10		A9 AR8 ARL8*	A7 AN7 AL7*
	18 mm	B-11	BR10	B9	BR8 B7
	3/8"	T11		T9	T7
GLOBE UNION INC.	10 mm	G0-110		G0-165	
	14 mm	G4-85	G4-120	G4-150	
	18 mm	G8-85	G8-125	G8-165	
	3/8"	G7-110		G7-150	
FIRE- STONE	10 mm	T-60-F			
	14 mm	F-120-F		F-80-F	F-90-LF*
	18 mm	M-120-CF		M-80-CF	
	3/8"	S-120-CF		S-80-CF	
TORQUE WRENCH CHART	Always use a spark plug socket wrench or a torque wrench. These wrenches are readily obtainable and are the only kind which will avoid distortion of the plug and insure the insulator against damage or breakage.				

*Long reach.

RANGE COMPARISONS

E Cool	F Cold	G Very Cold	H Extremely Cold			
104 Com 104		103 Com		10 mm	AC	
44 Com 44-5 Com 44	43L* 43L Com*	43 Com	42-5 Com 42 Com	14 mm		
84 83S Com 83 Com	82 Com 82S Com		81S Com	18 mm		
	74 74 Com	73 Com		7/8"		
Y-4A				10 mm	CHAM- PION	
J-7		J-6 H-9*	H-8*	J-2		14 mm
13 6 Com	5 Com	R-7	R-1	R-11 R-2		18 mm
1 Com	0 Com					7/8"
P4 PR4				10 mm	AUTO- LITE	
A5 AR5 AN5 AL5* ARL5*			AR4 A3	14 mm		
B7	B5	BR4		18 mm		
T7				7/8"		
G0-230				10 mm	GLOBE UNION INC.	
G4-185	G4-220			14 mm		
G8-195	G8-220			18 mm		
G7-175	G7-195			7/8"		
T-40-F				10 mm	FIRE- STONE	
F-40-F	F-50-LF*		F-30-F	14 mm		
M-80-CF	M-40-CF			18 mm		
S-40-CF				7/8"		
Average torque wrench pressures recommended for standard plugs in vehicles. All pressures listed are based on spark plug and engine threads being clean.					TORQUE WRENCH CHART	
Plug Thread		Cast Iron Heads	Aluminum Heads			
10 mm		14 lb-ft	12 lb-ft			
14 mm		30 lb-ft	28 lb-ft			
18 mm		34 lb-ft	32 lb-ft			
7/8"		37 lb-ft	35 lb-ft			

HUDSON

CAR MODEL	Pacemaker 4-A	Super Six and Commodore Six 5-A and 6-A
ENGINE		
No. Cyl-Head Type.....	6-L	6-L
Bore & Stroke (in).....	3-9/16x3-7/8	3-9/16x4-3/8
Displacement (cu in).....	232	262
AMA Horsepower.....	30.4	30.4
Max Horsepower @ rpm.....	112 @ 4000	123 @ 4000
Max Torque, lb-ft @ rpm.....	175 @ 1600	200 @ 1600
Max bmep, lb/sq in.....	113.8	115.0
Head Material.....	Cast Iron	Cast Iron
Compression Ratio.....	6.7 (1)	6.7 (1)
Comp Press, lb/sq in @ rpm.....	119 @ 125	119 @ 125
Piston Material.....	AA	AA
Bearing Material.....	Steel Backed Babbitt	

IGNITION		
Spark Plug—Factory Eqpt.....	Champ H-8	Champ H-8
Alternate.....	AC 45L, AL AL5	
Spark Plug Gap.....	.032"	.032"
Breaker Gap.....	.020"	.020"
Cam Angle.....	39°	39°
Firing Order.....	1-5-3-6-2-4	1-5-3-6-2-4
Timing—Crankshaft Degrees....	TDC	TDC
Adv Deg—Centrif—Vac.....	20-10	18-8
Adv Begins—Ends—Eng rpm ...	600-2400	1000-4000

VALVES		
Make & Material.....	Int Eaton NE 8645	Eaton NE 8645
	Exh Eaton 2112	Eaton 2112
Tappet Clr—Seat Angle.....	Int .008" H, 45°	.008" H, 45°
	Exh .010" H, 45°	.010" H, 45°
Exhaust Seat Inserts.....	None	None

CARBURETOR		
Make, Model.....	Car WAI-749-S	Car WGD-776-S
Size, Type.....	1-1/2" Sgl DD	1-1/4" Dual DD
Float Level.....	1/2" (2)	3/16" (3)
Choke Control.....	Automatic	Automatic

ENGINE LUBRICATION		
Oil—Summer—Winter—SAE	See Hudson Instruction Book	
Normal Oil Press—lb @ mph....	40 @ 30	40 @ 30
Oil Filter—Make.....	None	None

CAPACITY		
Oil.....(qt)	7 (4)	7 (4)
Water.....(qt)	18-1/2 (5)	18-1/2 (5)
Transmission.....(pt)	2 (6)	2 (7)
Rear Axle.....(pt)	3-1/2	3-1/2
Gasoline.....(gal)	20	20

GENERAL DATA (5 Passenger Sedan)		
Wheelbase.....(in)	119	124
Over-all Lgth Incl Bumpers.....(in)	201-1/2	208-1/8
Shipping Weight.....(lb)	3460	(8)
Tire Size—Recm Press.....(lb)	7.10x15-26-24	7.10x15-26-24
Rear Axle Ratio—Type.....	4.1 (9)	4.1 (10)

LOCATION CHASSIS SERIAL NO.	Right Front Pillar Post
------------------------------------	-------------------------

- (1) 7.2 optional with aluminum head.
- (2) From projection on bowl cover to soldered seam of float—with cover inverted and needle seated.
- (3) From bowl cover to top of float—with cover inverted and needle seated.
- (4) 7-1/2 quarts for dry engine.
- (5) Add 1 quart when equipped with heater.
- (6) 3-1/4 pints when equipped with overdrive.
- (7) 3-1/4 pints with overdrive. Hydra-Matic requires 11.3 quarts for refill.
- (8) Custom 3565—Commodore 3600.
- (9) 4.55 optional.
- (10) 4.55 optional—3.58 standard with Hydra-Matic.

CAR MODEL	Hornet 7-A	Commodore Eight 8-A
ENGINE		
No. Cyl-Head Type.....	6-L	8-L
Bore & Stroke (in).....	3-13/16x4-1/2	3x4-1/2
Displacement (cu in).....	308	254
AMA Horsepower.....	34.88	28.8
Max Horsepower @ rpm.....	145 @ 3800	128 @ 4200
Max Torque, lb-ft @ rpm.....	257 @ 1800	198 @ 1600
Max bmep, lb/sq in.....	125.8	117.6
Head Material.....	Aluminum	Cast Iron
Compression Ratio.....	7.2 (1)	6.7 (2)
Comp Press, lb/sq in @ rpm.....		119 @ 125
Piston Material.....	AA	AA
Bearing Material.....		Steel Backed Babbitt
IGNITION		
Spark Plug—Factory Eqpt.....	Champ H-8	Champ H-8
Alternate.....		AC 45L, AL AL5
Spark Plug Gap.....	.032"	.032"
Breaker Gap.....	.020"	.017"
Cam Angle.....	39°	27°
Firing Order.....	1-5-3-6-2-4	1-6-2-5-8-3-7-4
Timing—Crankshaft Degrees....	TDC	TDC
Adv Deg—Centrif—Vac.....	18-8	35-8
Adv Begins—Ends—Eng rpm ...	1000-4000	600-3400
VALVES		
Make & Material.....	Int Eaton NE 8645	Eaton NE 8645
	Exh Eaton 2112	Eaton Sil XB
Tappet Clr—Seat Angle.....	Int .008" H, 45°	.008" H, 45°
	Exh .010" H, 45°	.010" H, 45°
Exhaust Seat Inserts.....	None	None
CARBURETOR		
Make, Model.....	Car WGD-776-S	Car WGD-773-S
Size, Type.....	1-1/4" Dual DD	1-1/4" Dual DD
Float Level.....	3/16" (3)	3/16" (3)
Choke Control.....	Automatic	Automatic
ENGINE LUBRICATION		
Oil—Summer—Winter—SAE		See Hudson Instruction Book
Normal Oil Press—lb @ mph....	40 @ 30	
Oil Filter—Make.....	None	None
CAPACITY		
Oil.....(qt)	7 (4)	7 (5)
Water.....(qt)	18-1/2 (6)	18-1/2 (6)
Transmission.....(pt)	2 (7)	2 (7)
Rear Axle.....(pt)	3-1/2	3-1/2
Gasoline.....(gal)	20	20
GENERAL DATA (5 Passenger Sedan)		
Wheelbase.....(in)	124	124
Over-all Lgth Incl Bumpers. (in)	208-1/8	208-1/8
Shipping Weight.....(lb)	3600	3620
Tire Size—Recm Press.....(lb)	7.10x15-26-24	7.10x15-26-24
Rear Axle Ratio—Type.....	4.1 (8)	4.1 (8)
LOCATION CHASSIS SERIAL NO.		Right Front Pillar Post
(1) 6.7 optional with cast iron head.		
(2) 7.2 optional with aluminum head.		
(3) From bowl cover to top of float—with cover inverted and needle seated.		
(4) 7-1/2 quarts for dry engine.		
(5) 8 quarts for dry engine.		
(6) Add 1 quart when equipped with heater.		
(7) 3-1/4 pints with overdrive. Hydra-Matic requires 11.3 quarts for refill.		
(8) 4.55 and 3.58 optional. 3.58 standard with Hydra-Matic.		

HENRY J

CAR MODEL	513	514
ENGINE		
No. Cyl-Head Type.....	4-L	6-L
Bore & Stroke (in).....	3-1/8x4-3/8	3-1/8x3-1/2
Displacement (cu in).....	134.2	161
AMA Horsepower.....	15.63	23.44
Max Horsepower @ rpm.....	68 @ 4000	80 @ 3800
Max Torque, lb-ft @ rpm.....	109 @ 1800	133 @ 1600
Max bmep, lb/sq in.....	122.5	124.6
Head Material.....	Cast Iron	Cast Iron
Compression Ratio.....	7.00	7.00
Comp Press, lb/sq in @ Cr Sp....	120 to 130	130 to 140
Piston Material.....	AA	AA
Bearing Material.....		Steel Backed Babbitt
IGNITION		
Spark Plug—Factory Eqpt.....	AL AN7	AL AN7
Alternate.....		AC 45, Champ J-8
Spark Plug Gap.....	.030"	.030"
Breaker Gap.....	.020"	.020"
Cam Angle.....	41° ± 1°	38° ± 1°
Firing Order.....	1-3-4-2	1-5-3-6-2-4
Timing—Crankshaft Degrees....	5° BTC	TDC
Adv Deg—Centrif—Vac.....	22 - 20	24 - 12
Adv Begins—Ends—Eng rpm ...	700 - 3000	700 - 3000
VALVES		
Make & Material.....	Int Various 3140	Various 3140
	Exh Various Uniloy 2112	
Tappet Clr—Seat Angle.....	Int .016" C, 45°	.016" C, 45°
	Exh .016" C, 45°	.016" C, 45°
Exhaust Seat Inserts.....	None	None
CARBURETOR		
Make, Model.....	Car 820-S	Car 833-S
Size, Type.....	1-1/4" Sgl DD	1-1/4" Sgl DD
Float Level.....	9/32" (1)	9/32" (1)
Choke Control.....	Manual	Manual
ENGINE LUBRICATION		
Oil—Summer—Winter—SAE	See Henry J Instruction Book	
Normal Oil Press—lb @ mph....	30-35 @ 30-40	30-35 @ 30-40
Oil Filter—Make.....	None	None
CAPACITY		
Oil.....	(qt) 4	5
Water.....	(qt) 10-3/4 (2)	9 (2)
Transmission.....	(pt) 1-1/2 (3)	1-1/2 (3)
Rear Axle.....	(pt) 3	3
Gasoline.....	(gal) 13	13
GENERAL DATA (5 Passenger Sedan)		
Wheelbase.....	(in) 100	100
Over-all Lgth Incl Bumpers. (in)	174-1/2	174-1/2
Shipping Weight.....	(lb) 2293	2341
Tire Size—Recm Press.....	(lb) 5.90x15-24-24	5.90x15-24-24
Rear Axle Ratio—Type.....	4.55	4.55
LOCATION CHASSIS SERIAL NO.		
Left Front Pillar Post		
(1) From top of float to bottom surface of float bowl cover.		
(2) One quart additional if equipped with a heater.		
(3) 3/4 pint additional when equipped with overdrive.		

KAISER-FRAZER

CAR MODEL	Kaiser	Frazer
ENGINE		
No. Cyl-Head Type.....	6-L	6-L
Bore & Stroke (in).....	3-5/16x4-3/8	3-5/16x4-3/8
Displacement (cu in).....	226.2	226.2
AMA Horsepower.....	26.3	26.3
Max Horsepower @ rpm.....	115 @ 3650	115 @ 3650
Max Torque, lb-ft @ rpm.....	190 @ 1800	190 @ 1800
Max bmep, lb/sq in.....	126.7	126.7
Head Material.....	Cast Iron	Cast Iron
Compression Ratio.....	7.3	7.3
Comp Press, lb/sq in @ rpm....	120 @ 70	120 @ 70
Piston Material.....	AA	AA
Bearing Material.....		Steel Backed Babbitt
IGNITION		
Spark Plug—Factory Eqpt.....	AL A5	AL A5
Alternate.....		AC 44, Champ J-8
Spark Plug Gap.....	.032"	.032"
Breaker Gap.....	.022"	.020"
Cam Angle.....	31° to 37°	38°
Firing Order.....	1-5-3-6-2-4	1-5-3-6-2-4
Timing—Crankshaft Degrees....	4° BTC	4° BTC
Adv Deg—Centrif—Vac.....	20 - 12	20 - 12
Adv Begins—Ends—Eng rpm....	650 - 3200	650 - 3360
VALVES		
Make & Material.....	Int TP or Eaton or Rich 8640 Exh TP or Eaton or Rich XCR	
Tappet Clr—Seat Angle.....	Int .014" C, 30° Exh .014" C, 45°	.014" C, 30° .014" C, 45°
Exhaust Seat Inserts.....	None	None
CARBURETOR		
Make, Model.....	Car WGD-781-S	Car WGD-813-S
Size, Type.....	1-1/4" Dual DD	1-1/4" Dual DD
Float Level.....	1/4" (1)	1/4" (1)
Choke Control.....	Automatic	Automatic
ENGINE LUBRICATION		
Oil—Summer—Winter—SAE	See Kaiser or Frazer Instruction Book	
Normal Oil Press—lb @ mph....	35 @ 30	35 @ 30
Oil Filter—Make.....	Purolator	Purolator or Fram
CAPACITY		
Oil.....(qt)	5 (2)	5 (2)
Water.....(qt)	13-1/2 (3)	13 (3)
Transmission.....(pt)	2-1/2 (4)	2-1/2 (4)
Rear Axle.....(pt)	3	3
Gasoline.....(gal)	17	21
GENERAL DATA (5 Passenger Sedan)		
Wheelbase.....(in)	118-1/2	123-1/2
Over-all Lgth Incl Bumpers.(in)	208-1/2	211-3/8
Shipping Weight.....(lb)	3126 (5)	3456
Tire Size—Recm Press.....(lb)	6.70x15-24-24	7.10x15-24-24
Rear Axle Ratio—Type.....	3.91 (6)	3.91 (7)
LOCATION CHASSIS SERIAL NO.		
	Left Front Pillar Post	
(1) From top of float to bottom of float bowl cover — float cover inverted.		
(2) 5 quarts refill — 6 quarts with new filter element.		
(3) Without heater.		
(4) 3-1/2 pints with overdrive. When equipped with Hydra-Matic, 11 quarts required for refill, 12 quarts when unit is dry.		
(5) Kaiser Deluxe 3171.		
(6) 4.55 with overdrive. 3.54 with Hydra-Matic.		
(7) 4.27 with overdrive. 4.55 optional with overdrive. 3.54 with Hydra-Matic.		

LINCOLN-MERCURY

CAR MODEL	Lincoln	Lincoln Cosmopolitan	Mercury
ENGINE			
No. Cyl-Head Type.....	V-8-L	V-8-L	V-8-L
Bore & Stroke (in).....	3-1/2x4-3/8	3-1/2x4-3/8	3-3/16x4
Displacement (cu in).....	336.7	336.7	255.4
AMA Horsepower.....	39.2	39.2	32.5
Max Horsepower @ rpm.....	154 @ 3600	154 @ 3600	112 @ 3600
Max Torque, lb-ft @ rpm.....	275 @ 1800	275 @ 1800	206 @ 2000
Max bmeq, lb/sq in.....	123.2	123.2	121.6
Head Material.....	Cast Iron	Cast Iron	Cast Iron
Compression Ratio.....	7.0	7.0	6.8
Comp Press, lb/sq in @ rpm.....	110	110	115
Piston Material.....		AA—Steel Strut	
Bearing Material.....		Steel Backed Copper-Lead Alloy	
IGNITION			
Spark Plug—Factory Eqpt.....	Champ H-10	Champ H-10	Champ H-10
Alternate.....		AC 45L, AL AL7	
Spark Plug Gap.....	.029" to .032"	.029" to .032"	.029" to .032"
Breaker Gap.....	.014" to .016"	.014" to .016"	.014" to .016"
Cam Angle.....	26° to 28-1/2°	26° to 28-1/2°	26° to 28-1/2°
Firing Order.....		1-5-4-8-6-3-7-2	
Timing—Crankshaft Degrees....	4° BTC	4° BTC	2° BTC
Adv Deg—Centrif—Vac.....	(1)	(1)	(2)
Adv Begins—Ends—Eng rpm....			
VALVES			
Make & Material.....	Int Exh	Ford, Eaton or Rich Sil #1 Ford, Eaton or Rich Nichrome Alloy	
Tappet Clr—Seat Angle.....	Int Auto Adj, 45° Exh Auto Adj, 45°	Auto Adj, 45° Auto Adj, 45°	.013"-.015"C, 45° .017"-.019"C, 45°
Exhaust Seat Inserts.....	Yes	Yes	Yes
CARBURETOR			
Make, Model.....	Holley (587)	Holley (587)	Holley (493.2)
Size, Type.....	1-1/4" Dual DD	1-1/4" Dual DD	1-1/4" Dual DD
Float Level.....	1/2" ± 1/32" (3)	1/2" ± 1/32" (3)	1/2" ± 1/32" (3)
Choke Control.....	Automatic	Automatic	Automatic
ENGINE LUBRICATION			
Oil—Summer—Winter—SAE	See Lincoln or Mercury Instruction Book		
Normal Oil Press—lb @ mph....	50 @ 40	50 @ 40	57 @ 40
Oil Filter—Make.....	Fram	Fram	Fram
CAPACITY			
Oil.....(qt) (4)	(4)	(4)	(5)
Water.....(qt) 34-1/2	34-1/2	34-1/2	22-1/4
Transmission.....(pt) 3-1/2 (6)	3-1/2 (6)	3-1/2 (6)	3-1/4 (7)
Rear Axle.....(pt) 4	4	4	3
Gasoline.....(gal) 19-1/2	19-1/2	21-1/2	19-1/2
GENERAL DATA (5 Passenger Sedan)			
Wheelbase.....(in) 121	125	118	
Over-all Lgth Incl Bumpers. (in) 214.8	222.5	206.8	
Shipping Weight.....(lb) 4055	4360	3475	
Tire Size—Recm Press.....(lb) 8.00x15-26-24	8.20x15-24-24	7.10x15-24-24	
Rear Axle Ratio—Type.....	3.91 (8)	3.91 (8)	3.92 (9)

LOCATION CHASSIS SERIAL NO. Left Hand Engine Side of Dash

- (1) Full vacuum actuated distributor—maximum advance with wide open throttle at 4000 rpm is 20-1/2°—at cruising torque maximum is 24°.
- (2) Full vacuum actuated distributor—maximum advance with wide open throttle at 4000 rpm is 16°—at cruising torque maximum advance is 21°.
- (3) From bowl cover flange to fuel level.
- (4) 6-1/2 quarts dry including filter—6 quarts refill.
- (5) 6 quarts dry including filter—5 quarts refill.
- (6) 4 pints with overdrive. Hydramatic requires 12 quarts.
- (7) 4-1/4 pints when equipped with overdrive (4 pints for refill with overdrive). Mercomatic requires 9 quarts.
- (8) 4.27 with overdrive—3.31 with Hydramatic.
- (9) 4.27 with overdrive—3.31 with Mercomatic.

CAR MODEL	Rambler 51-10	Statesman 51-40	Ambassador 51-60
ENGINE			
No. Cyl-Head Type.....	6-L	6-L	6-I
Bore & Stroke (in).....	3-1/8x3-3/4	3-1/8x4	3-3/8x4-3/8
Displacement (cu in).....	172.6	184	234.8
AMA Horsepower.....	23.44	23.44	27.34
Max Horsepower @ rpm.....	82 @ 3800	85 @ 3800	115 @ 3400
Max Torque, lb-ft @ rpm.....	138 @ 1600	140 @ 1600	210 @ 1600
Max bmep, lb/sq in.....	120.6	114.8	134.8
Head Material.....	Cast Iron	Cast Iron	Cast Iron
Compression Ratio.....	7.25 (1)	7.00 (2)	7.30 (3)
Comp Press, lb/sq in @ Cr Sp....	120	120	130
Piston Material.....	AA	AA	AA
Bearing Material.....		Steel Backed Babbitt	
IGNITION			
Spark Plug—Factory Eqpt.....	AL A5	AL A5	AL A5 or AC 44
Alternate.....	AC 44, Champ J-8	Champ J-8	Champ J-8
Spark Plug Gap.....	.030"	.030"	.030"
Breaker Gap.....	.018" to .024"	.018" to .024"	.018" to .024"
Cam Angle.....	35°	35°	35°
Firing Order.....	1-5-3-6-2-4	1-5-3-6-2-4	1-5-3-6-2-4
Timing—Crankshaft Degrees....	TDC	TDC	TDC
Adv Deg—Centrif—Vac.....	22-15	22-15	28-12
Adv Begins—Ends—Eng rpm....	600-2800	600-2800	600-2700
VALVES			
Make & Material.....	Int Various 3140 Exh AI or Rich 2112	Various 3140 AI or Eaton 2112	Various 3140
Tappet Ctr—Seat Angle.....	Int .016" C, 45° Exh .018" C, 45°	.015" H, 45° .015" H, 45°	.015" H, 30° .018" H, 45°
Exhaust Seat Inserts.....	None	None	None
CARBURETOR			
Make, Model.....	Car YF-757-S	Car YF-824-S	Car WAI-746
Size, Type.....	1-1/4" Sgl DD	1-1/4" Sgl DD	1-1/4" Sgl DD
Float Level.....	1/2" (4)	1/2" (4)	1/2" (5)
Choke Control.....	Automatic	Automatic	Automatic
ENGINE LUBRICATION			
Oil—Summer—Winter—SAE.....		See Nash Instruction Book	
Normal Oil Press—lb @ mph....	50 @ 30	50 @ 30	50 @ 30
Oil Filter—Make.....	None	None	None
CAPACITY			
Oil.....(qt)	5	5	6
Water.....(qt)	12 (6)	15 (6)	18 (6)
Transmission.....(pt)	1-1/2 (7)	2-1/4 (8)	2-1/4 (8)
Rear Axle.....(pt)	3	3	4
Gasoline.....(gal)	20	20	20
GENERAL DATA (5 Passenger Sedan)			
Wheelbase.....(in)	100	112	121
Over-all Lgth Incl Bumpers.(in)	176	201	211
Shipping Weight.....(lb)	(9)	2970	3410
Fire Size—Recm Press.....(lb)	5.90x15-24-24	6.40x-15-24-24	7.10x15-24-24
Rear Axle Ratio—Type.....	3.77 (10)	4.375 (11)	4.1 (12)
LOCATION CHASSIS SERIAL NO. Under Hood Right Hand Side			
(1) 7.6 optional.	(2) 7.35 optional.		
(3) 7.50 optional. "Dual Jet Fire" Model equipped with aluminum head of 8.2 compression ratio.			
(4) From top of float (at free end) to float chamber cover—with float chamber cover inverted.			
(5) From top of projection on bowl cover to top of soldered seam at front end of float—with bowl cover inverted.			
(6) With heater.	(7) 1 1/4 pints additional with overdrive.		
(8) 1 1/4 pints additional with overdrive. When equipped with Hydra-Matic, approximately 11 quarts for refill, 12 quarts when unit is completely dry.			
(9) Convertible 2430—Station Wagon 2515.			
(10) 4.375 with overdrive—4.1 optional.			
(11) 4.875 with overdrive—3.778 with Hydra-Matic.			
(12) 4.444 with overdrive—3.545 with Hydra-Matic.			

OLDSMOBILE

CAR MODEL	88	Super 88	98
ENGINE			
No. Cyl-Head Type.....	V-8-I	V-8-I	V-8-I
Bore & Stroke (in).....	3-3/4x3-7/16	3-3/4x3-7/16	3-3/4x3-7/16
Displacement (cu in).....	303.73	303.73	303.73
AMA Horsepower.....	45.0	45.0	45.0
Max Horsepower @ rpm.....	135 @ 3600	135 @ 3600	135 @ 3600
Max Torque, lb-ft @ rpm.....	263 @ 1800	263 @ 1800	263 @ 1800
Max bmep, lb/sq in.....	130.7	130.7	130.7
Head Material.....	Cast Iron	Cast Iron	Cast Iron
Compression Ratio.....	7.50	7.50	7.50
Comp Press, lb/sq in @ rpm.....	180-190 @ 1000	180-190 @ 1000	180-190 @ 1000
Piston Material.....	AA—Steel Strut		
Bearing Material.....	Steel Backed Durex		
IGNITION			
Spark Plug—Factory Eqpt.....	AC 46-5	AC 46-5	AC 46-5
Alternate.....		Champ J-11, AL AN7	
Spark Plug Gap.....	.030"	.030"	.030"
Breaker Gap.....	.016"	.016"	.016"
Cam Angle.....	26° to 33°	26° to 33°	26° to 33°
Firing Order.....		1-8-7-3-6-5-4-2	
Timing—Crankshaft Degrees....	2-1/2° BTC	2-1/2° BTC	2-1/2° BTC
Adv Deg—Centrif—Vac.....	30-20	30-20	30-20
Adv Begins—Ends—Eng rpm...	600-3700	600-3700	600-3700
VALVES			
Make & Material.....	Int Exh SII XCR	Various 3140 and NE 8645 SII XCR	SII XCR
Tappet Clr—Seat Angle.....	Int Exh	Automatic Adjusters, 45°	Automatic Adjusters, 45°
Exhaust Seat Inserts.....	None	None	None
CARBURETOR			
Make, Model.....		Rochester BB or Carter WGD	
Size, Type.....		1-7/16" Dual DD	
Float Level.....	(1)	(1)	(1)
Choke Control.....	Automatic	Automatic	Automatic
ENGINE LUBRICATION			
Oil—Summer—Winter—SAE	See Oldsmobile Instruction Book		
Normal Oil Press—lb @ mph....	40 @ 30	40 @ 30	40 @ 30
Oil Filter—Make.....	(2)	(2)	(2)
CAPACITY			
Oil.....	(qt) 5	5	5
Water.....	(qt) 21-1/2	21-1/2	21-1/2
Transmission.....	(pt) 2 (3)	2 (3)	2 (3)
Rear Axle.....	(pt) 3-3/4	3-3/4	3-3/4
Gasoline.....	(gal) 18	18	18
GENERAL DATA (5 Passenger Sedan)			
Wheelbase.....	(in) 119-1/2	120	122
Over-all Lgth Incl Bumpers.(in)	202	204	208
Shipping Weight.....	(lb) 3522	3605	3780
Tire Size—Recm Press.....	(lb) 7.60x15-24-24	7.60x15-24-24	7.60x15-24-24
Rear Axle Ratio—Type.....	3.64 (4)	3.64 (4)	3.9 (5)
LOCATION CHASSIS SERIAL NO.			
	Left Front Door Pillar Post		

- (1) Rochester BB—1-1/8" from cover gasket to bottom of float—with float cover inverted and needle seated. Carter WGD—1/4" from top of cover to top of float with float cover inverted and needle seated.
- (2) AC optional at extra cost.
- (3) Hydra-Matic requires 10½ quarts for refill.
- (4) 3.9 optional. 3.42 standard with Hydra-Matic—3.64 optional with Hydra-Matic on Super 88.
- (5) With Hydra-Matic—3.64 standard, 3.9 optional.

PACKARD

CAR MODEL	200 Synchromesh & Ultramatic	300 Synchromesh & Ultramatic	400 Ultramatic
ENGINE			
No. Cyl-Head Type.....	8-L	8-L	8-L
Bore & Stroke (in).....	3-1/2x3-3/4	3-1/2x4-1/4	3-1/2x4-1/4
Displacement (cu in).....	288	327	327
AMA Horsepower.....	39.2	39.2	39.2
Max Horsepower @ rpm.....	135 @ 3600 (1)	150 @ 3600 (2)	155 @ 3600
Max Torque, lb-ft @ rpm.....	230 @ 2000 (1)	270 (2)	275
Max bmep, lb/sq in.....	120.4 (1)	124.5 (2)	126.8
Head Material.....	Cast Iron	Cast Iron	Cast Iron
Compression Ratio.....	7.00 (1)	7.00 (2)	7.80
Comp Press, lb/sq in @ rpm.....			
Piston Material.....	AA	AA	AA
Bearing Material.....		Steel Backed Durex	
IGNITION			
Spark Plug—Factory Eqt.....	AL A5 or AC 46-5 or Champ J-8		
Alternate.....			
Spark Plug Gap.....	.026"-.030"	.026"-.030"	.026"-.030"
Breaker Gap.....	.0125"-.0175"	.0125"-.0175"	.0125"-.0175"
Cam Angle.....	21° to 30°	21° to 30°	21° to 30°
Firing Order.....		1 - 6 - 2 - 5 - 8 - 3	7 - 4
Timing—Crankshaft Degrees....	6° BTC	6° BTC	6° BTC
Adv Deg—Centrif—Vac.....	16° - 21°	16° - 21°	16° - 21°
Adv Begins—Ends—Eng rpm....	600 - 3200	600 - 3200	600 - 3200
VALVES			
Make & Material.....Int		Chrome Nickel Steel	
Exh	2112	2112	2112
Tappet Clr—Seat Angle.....Int	.007" H, 30°	Auto Adj, 30°	Auto Adj, 30°
Exh	.010" H, 45°	Auto Adj, 45°	Auto Adj, 45°
Exhaust Seat Inserts.....	None	None	None
CARBURETOR			
Make, Model.....	Car WGD-784-S	Car WGD-767-S	
Size, Type.....	1-1/4" Dup DD	1-1/4" Dup DD	1-1/4" Dup DD
Float Level.....	13/64" (3)	13/64" (3)	13/64" (3)
Choke Control.....	Automatic	Automatic	Automatic
ENGINE LUBRICATION			
Oil—Summer—Winter—SAE.....	See Packard Instruction Book		
Normal Oil Press—lb.....	40	40	40
Oil Filter—Make.....	None	Purolator	Purolator
CAPACITY			
Oil.....(qt)	7	7	7
Water.....(qt)	20 (4)	20 (4)	20 (4)
Transmission.....(pt)	2 (5)	2 (5)	24
Rear Axle.....(pt)	4	4	4
Gasoline.....(gal)	20	20	20
GENERAL DATA (5 Passenger Sedan)			
Wheelbase.....(in)	122	127	127
Over-all Lgth Incl Bumpers. (in)	209-3/8	217-3/4	217-3/4
Shipping Weight.....(lb)	3660 (6)	3930 (6)	4115
Tire Size—Recm Press.....(lb)	7.60x15-24-24	8.00x15-24-24	8.00x15-24-24
Rear Axle Ratio—Type.....	3.9 (7)	3.9 (7)	3.54
LOCATION CHASSIS SERIAL NO.			
	Left Front Door Pillar Post		
(1) With Ultramatic Drive, cylinder head of 7.5 compression ratio is used. Maximum HP is increased to 138; maximum torque to 235; maximum bmep to 123.0.			
(2) With Ultramatic Drive, cylinder head of 7.8 compression ratio is used. Maximum HP is increased to 155; maximum torque to 275; maximum bmep to 126.8.			
(3) Below top of bowl.			
(4) One pint additional with heater.			
(5) 1-1/4 pints additional for overdrive. Ultramatic Drive requires 24 pints.			
(6) 105 pounds additional with Ultramatic Drive.			
(7) 4.1 with overdrive, 3.54 with Ultramatic Drive.			

PLYMOUTH

CAR MODEL	Concord P-22	Cambridge P-23	Cranbrook P-23
ENGINE			
No. Cyl-Head Type.....	6-L	6-L	6-L
Bore & Stroke (in).....	3-1/4x4-3/8	3-1/4x4-3/8	3-1/4x4-3/8
Displacement (cu in).....	217.8	217.8	217.8
AMA Horsepower.....	25.35	25.35	25.35
Max Horsepower @ rpm.....	97 @ 3600	97 @ 3600	97 @ 3600
Max Torque, lb-ft @ rpm.....	175 @ 1200	175 @ 1200	175 @ 1200
Max bmep, lb/sq in.....	121.2	121.2	121.2
Head Material.....	Cast Iron	Cast Iron	Cast Iron
Compression Ratio.....	7.00	7.00	7.00
Comp Press, lb/sq in @ rpm.....	120-150 @ 150	120-150 @ 150	120-150 @ 150
Piston Material.....	AA	AA	AA
Bearing Material.....		Steel Backed Babbitt	
IGNITION			
Spark Plug—Factory Eqpt.....	AL AR8	AL AR8	AL AR8
Alternate.....		AC 46-5, Champ J-8	
Spark Plug Gap.....	.035"	.035"	.035"
Breaker Gap.....	.020"	.020"	.020"
Cam Angle.....	34-1/2° to 38°	34-1/2° to 38°	34-1/2° to 38°
Firing Order.....	1-5-3-6-2-4	1-5-3-6-2-4	1-5-3-6-2-4
Timing—Crankshaft Degrees.....	2° BTC	2° BTC	2° BTC
Adv Deg—Centrif—Vac.....	22-18	22-18	22-18
Adv Begins—Ends—Eng rpm.....	700-2850	700-2850	700-2850
VALVES			
Make & Material.....	Int Exh	Various Alloy Steels Silicon-Chromium Steel	
Tappet Clr—Seat Angle.....	Int .008" H, 45° Exh .010" H, 45°	.008" H, 45° .010" H, 45°	.008" H, 45° .010" H, 45°
Exhaust Seat Inserts.....	Yes	Yes	Yes
CARBURETOR			
Make, Model.....		Ball & Ball (Car)	
Size, Type.....		1-1/2" Sgl DD (Special)	
Floater Level.....	5/64" (1)	5/64" (1)	5/64" (1)
Choke Control.....	Automatic	Automatic	Automatic
ENGINE LUBRICATION			
Oil—Summer—Winter—SAE.....		See Plymouth Instruction Book	
Normal Oil Press—lb @ mph.....	40-50 @ 25	40-50 @ 25	40-50 @ 25
Oil Filter—Make.....	None	Purolator	Purolator
CAPACITY			
Oil.....(qt)	5	5	5
Water.....(qt)	13	13	13
Transmission.....(pt)	2-3/4	2-3/4	2-3/4
Rear Axle.....(pt)	3-1/4	3-1/4	3-1/4
Gasoline.....(gal)	17	17	17
GENERAL DATA (5 Passenger Sedan)			
Wheelbase.....(in)	111	118-1/2	118-1/2
Over-all Lgth Incl Bumpers.....(in)	188-1/8	193-7/8	193-7/8
Shipping Weight.....(lb)	2975 (2)	3110	3115
Tire Size—Recm Press.....(lb)	6.40x15-24-24	6.70x15-24-24	6.70x15-24-24
Rear Axle Ratio—Type.....	3.73	3.9	3.9
LOCATION CHASSIS SERIAL NO. Left Front Door Body Hinge Post			

- (1) From top of float chamber without gasket to top of float.
- (2) Two-door sedan.

PONTIAC

CAR MODEL	25-Streamliner & Chieftain 6	27-Streamliner & Chieftain 8
ENGINE		
No. Cyl-Head Type.....	6-L	8-L
Bore & Stroke (in).....	3-9/16x4	3-3/8x3-3/4
Displacement (cu in).....	239.2	268.4
AMA Horsepower.....	30.4	36.4
Max Horsepower @ rpm.....	96 @ 3400	116 @ 3600
Max Torque, lb-ft @ rpm.....	191 @ 1200	220 @ 2000
Max bmep, lb/sq in.....	120.4	123.6
Head Material.....	Cast Iron	Cast Iron
Compression Ratio.....	6.5 (1)	6.5 (1)
Comp Press, lb/sq in @ rpm.....	118-135 @ 200	118-135 @ 200
Piston Material.....	CNA	CNA
Bearing Material.....		Steel Backed Babbitt
IGNITION		
Spark Plug—Factory Eqpt.....	AC 45	AC 45
Alternate.....		Champ J-8, AL AN7
Spark Plug Gap.....	.025"	.025"
Breaker Gap.....	.022"	.016"
Cam Angle.....	35°	26°
Firing Order.....	1-5-3-6-2-4	1-6-2-5-8-3-7-4
Timing—Crankshaft Degrees.....	6° BTC	6° BTC
Adv Deg—Centrif—Vac.....	28-17	27-22
Adv Begins—Ends—Eng rpm.....	600-4100	500-4200
VALVES		
Make & Material.....	Int Rich V Steel	Rich V Steel
	Exh Rich 2112	or TP Sil XB
Tappet Clr—Seat Angle.....	Int .011"-.013" H, 30°	.011"-.013" H, 30°
	Exh .011"-.013" H, 45°	.011"-.013" H, 45°
Exhaust Seat Inserts.....	None	None
CARBURETOR		
Make, Model.....	RP BC	Car WCD-719-SA (2)
Size, Type.....	1-5/16" Sgl DD	1-3/16" Dual DD
Float Level.....	1-17/64" (3)	3/16" (4)
Choke Control.....	Automatic	Automatic
ENGINE LUBRICATION		
Oil—Summer—Winter—SAE.....	See Pontiac Instruction Book	
Normal Oil Press—lb @ mph.....	35-40 @ 40	35-40 @ 40
Oil Filter—Make.....	None	None
CAPACITY		
Oil.....	(qt) 5	5
Water.....	(qt) 18	19-1/2
Transmission.....	(pt) 1-3/4 (5)	1-3/4 (5)
Rear Axle.....	(pt) 3-1/4	3-1/4
Gasoline.....	(gal) 17-1/2	17-1/2
GENERAL DATA (5 Passenger Sedan)		
Wheelbase.....	(in) 120	120
Over-all Lgth Incl Bumpers.....	(in) 202.2	202.2
Shipping Weight.....	(lb) 3273 (6)	3363 (6)
Tire Size—Recm Press.....	(lb) 7.10x15-24-24 (7)	7.10x15-24-24 (7)
Rear Axle Ratio—Type.....	4.1 (8)	3.9 (9)
LOCATION CHASSIS SERIAL NO. Left Front Pillar Post		

- (1) 7.50 optional.
- (2) WCD-720-SA used with Hydra-Matic drive.
- (3) Bowl cover gasket to bottom of float using Kent-Moore Gauge J-4554.
- (4) Bowl cover to seam of float by use of Carter Gauge T-109-162.
- (5) Hydra-Matic drive requires approximately 11 quarts.
- (6) 115 lbs. additional when equipped with Hydra-Matic drive.
- (7) 7.60x15-22-20 optional.
- (8) 3.9 and 4.3 optional—3.63 with Hydra-Matic drive.
- (9) 3.63 and 4.1 optional—3.63 with Hydra-Matic drive.

STUDEBAKER

CAR MODEL	Champion 10G	Commander H	Land Cruiser H
ENGINE			
No. Cyl-Head Type.....	6-L	V-8-I	V-8-I
Bore & Stroke (in).....	3x4	3-3/8x3-1/4	3-3/8x3-1/4
Displacement (cu in).....	169.6	232.6	232.6
AMA Horsepower.....	21.6	36.4	36.4
Max Horsepower @ rpm.....	85 @ 4000	120 @ 4000	120 @ 4000
Max Torque, lb-ft @ rpm.....	138 @ 2400	190 @ 2000	190 @ 2000
Max bmep, lb/sq in.....	122.8	127.5	127.5
Head Material.....	Cast Iron	Cast Iron	Cast Iron
Compression Ratio.....	7.0 (1)	7.0 (1)	7.0 (1)
Comp Press, lb/sq in @ rpm.....	120 @ 150	120-140 @ 150	120-140 @ 150
Piston Material.....	AA	AA	AA
Bearing Material.....		Steel Backed Babbitt	

IGNITION

Spark Plug—Factory Eqpt.....	Champ J-7	Champ H-8	Champ H-8
Alternate.....	AC 44, AL A5	AC 45L, AL A5	
Spark Plug Gap.....	.0225"-.0275"	.0325"-.0375"	.0325"-.0375"
Breaker Gap.....	.020"	.013"-.018"	.013"-.018"
Cam Angle.....	38°-40°	22°-29°	22°-29°
Firing Order.....	1-5-3-6-2-4	1-8-4-3-6-5-7-2	
Timing—Crankshaft Degrees.....	2° BTC	8° BTC	8° BTC
Adv Deg—Centrif—Vac.....	14-18	28-16	28-16
Adv Begins—Ends—Eng rpm.....	800-2800	600-2600	600-2600

VALVES

Make & Material.....	Int Rich or Eaton Chrome Nickel Steel		
	Exh Rich or Eaton 2112	Rich or Eaton 2112N	
Tappet Clr—Seat Angle.....	Int .016" C, 45°	.012"-.014" H, 45°	
	Exh .016" C, 45°	.012"-.014" H, 45°	
Exhaust Seat Inserts.....	None	None	None

CARBURETOR

Make, Model.....	Car WE-715-S	Strom AAUVB-26	
Size, Type.....	1-1/4" Sgl DD	1-1/8" Dual DD	
Float Level.....	3/8" (2)	1/8" to 5/32" (3)	
Choke Control.....	Automatic	Automatic	Automatic

ENGINE LUBRICATION

Oil—Summer—Winter—SAE.....	See Studebaker Instruction Book		
Normal Oil Press—lb @ mph.....	20-40 @ 40	40 @ 25-30	40 @ 25-30
Oil Filter—Make.....	Fram (4)	Fram (4)	Fram (4)

CAPACITY

Oil.....	(qt) 5	6	6
Water.....	(qt) 10	17-1/4	17-1/4
Transmission.....	(pt) 1.5 (with OD 2.2) (5)	2.4 (with OD 3) (5)	
Rear Axle.....	(pt) 2-1/2	3	3
Gasoline.....	(gal) 18	18	18

GENERAL DATA (5 Passenger Sedan)

Wheelbase.....	(in) 115	115	119
Over-all Lgth Incl Bumpers.....	(in) 197-1/2	197-1/2	201-1/2
Shipping Weight.....	(lb) (6)	(7)	3165
Tire Size—Recm Press.....	(lb) 6.40x15-26-24	7.10x15-26-22	7.10x15-26-22
Rear Axle Ratio—Type.....	4.10 (8)	4.09 (9)	4.09 (9)

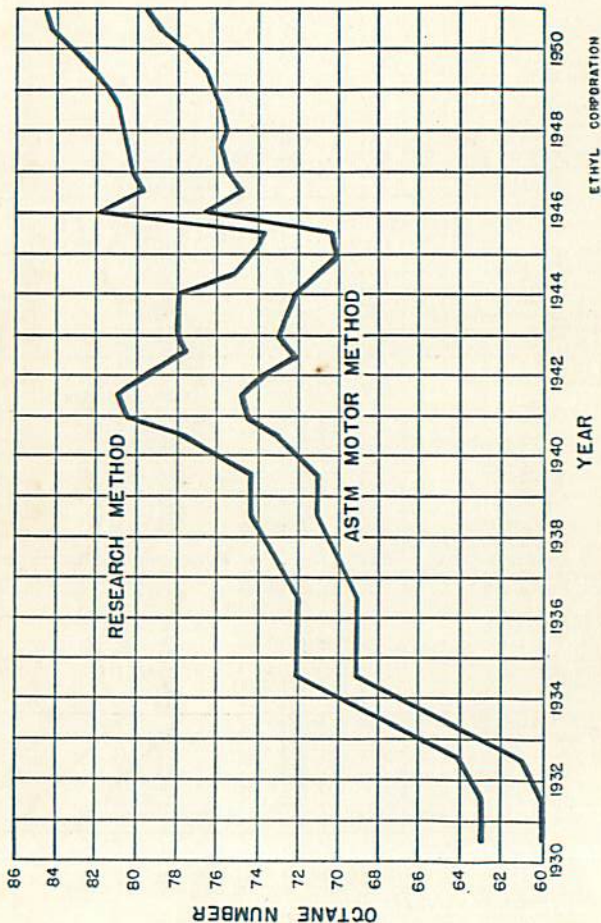
LOCATION CHASSIS SERIAL NO. Left Front Door Lock Pillar Post

- (1) 7.5 optional.
- (2) Between boss on bowl cover and far edge of float seam.
- (3) See Studebaker instruction book.
- (4) Standard on Land Cruiser. Optional at extra cost on Champion and Commander.
- (5) Models with overdrive—individual drain plugs and filler plugs. 9-1/2 quarts with automatic transmission.
- (6) DeLuxe 2715—Regal 2720.
- (7) Regal 3065—State 3070.
- (8) 4.56 with overdrive; 3.54 with automatic transmission.
- (9) 4.55 with overdrive; 3.54 with automatic transmission.

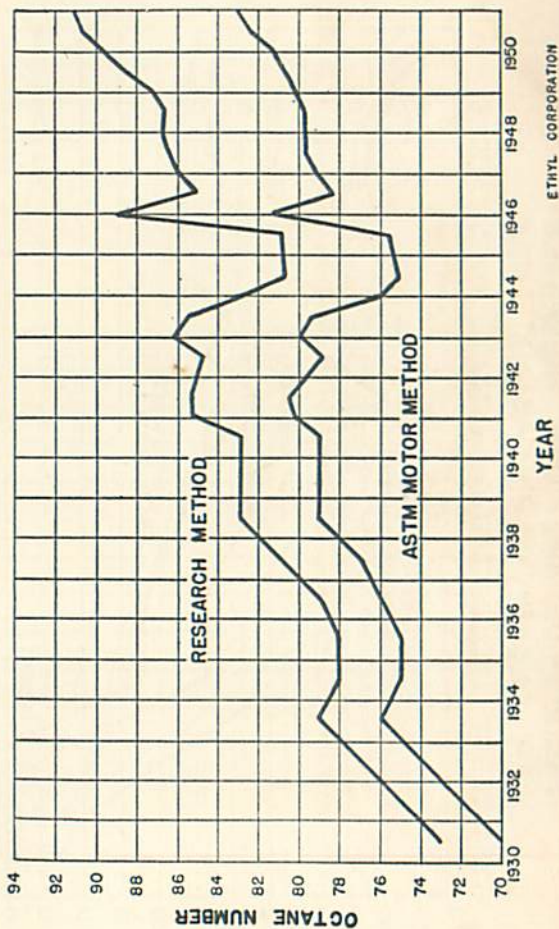
WILLYS

CAR MODEL	CJ-3A Jeep	4-73	6-73
ENGINE			
No. Cyl-Head Type.....	4-L	4-F	6-L
Bore & Stroke (in).....	3-1/8x4-3/8	3-1/8x4-3/8	3-1/8x3-1/2
Displacement (cu in).....	134.2	134.2	161.0
AMA Horsepower.....	15.63	15.63	23.45
Max Horsepower @ rpm.....	60 @ 4000	72 @ 4000	75 @ 4000
Max Torque, lb-ft @ rpm.....	105 @ 2000	114 @ 2000	124 @ 2000
Max bmeq, lb/sq in.....	118.1	128.0	116.1
Head Material.....	Cast Iron	Cast Iron	Cast Iron
Compression Ratio.....	6.48 (1)	7.40 (2)	6.90
Comp Press, lb/sq in @ rpm.....	115 @ 185	125 @ 185	125 @ 185
Piston Material.....	AA	AA	AA
Bearing Material.....	Steel Backed Babbitt Lined		
IGNITION			
Spark Plug—Factory Eqpt.....	Champ J-7		
Alternate.....	AC 44, AL AN7		
Spark Plug Gap.....	.030"	.030"	.030"
Breaker Gap.....	.020	.020	.020
Cam Angle.....	41°	51°	39°
Firing Order.....	1-3-4-2	1-3-4-2	1-5-3-6-2-4
Timing—Crankshaft Degrees....	5°BTC	TDC	TDC
Adv Deg—Centrif—Vac.....	22-0	22-10	24-12
Adv Begins—Ends—Eng rpm...	500-3000	600-4000	700-3000
VALVES			
Make & Material.....	Int Various 3140	Various 3140	Various 3140
Exh.....	Various 2112	Various Uniloy 2112	Various 2112
Tappet Ctr—Seat Angle.....	Int .016" C, 45°	.018" C, 45°	.016" C, 45°
Exh.....	.016" C, 45°	.016" C, 45°	.016" C, 45°
Exhaust Seat Inserts.....	None	None	None
CARBURETOR			
Make, Model.....	Car 636-SA	Car YF	Zenith 31A11
Size, Type.....	1" Sgl DD	1 1/4" Sgl DD	1 1/4" Sgl DD
Float Level.....	3/8" (3)	5/16" (4)	3/16" (4)
Choke Control.....	Manual	Manual	Manual
ENGINE LUBRICATION			
Oil—Summer—Winter—SAE....	See Willys-Overland Instruction Book		
Normal Oil Press—lb @ mph....	35 @ 30	35 @ 30	35 @ 30
Oil Filter—Make.....	Fram or Purolator	(5)	None
CAPACITY			
Oil.....(qt)	4	4	5
Water.....(qt)	11	11	9
Transmission.....(pt)	3 (6)	1-1/2 (7)	1-1/2 (7)
Rear Axle.....(pt)	2-3/4 (8)	2	2
Gasoline.....(gal)	10.5	15	15
GENERAL DATA (5 Passenger Sedan)			
Wheelbase.....(in)	80	104	104
Over-all Lgth Incl Bumpers.(in)	122-3/4	176-1/4	174-13/16
Shipping Weight.....(lb)	2108	2875	2845
Tire Size—Recm Press.....(lb)	6.00x16-28-28	6.70x15-24-24	6.70x15-24-24
Rear Axle Ratio—Type.....	5.38 (9)	5.38 (10)	5.38 (10)
LOCATION CHASSIS SERIAL NO. Plate on Dash Plate on Left Floor Riser			
(1)	7.00 optional.		
(2)	7.90 optional.		
(3)	From top of float to bottom of float bowl cover.		
(4)	From seam on top of float to bottom of float bowl cover.		
(5)	Fram or Purolator optional.		
(6)	Transfer case—4 pints—standard on Jeep.		
(7)	1 1/2 pints additional for overdrive.		
(8)	Front axle 2 1/2 pints.		
(9)	Both front and rear axles.		
(10)	5.38 standard with overdrive—4.88 standard without overdrive.		

TREND IN ANTIKNOCK QUALITY OF REGULAR GASOLINES SOLD IN THE UNITED STATES



TREND IN ANTIKNOCK QUALITY OF PREMIUM GASOLINES SOLD IN THE UNITED STATES



TRENDS OF AMERICAN PASSENGER CAR ENGINE DESIGN SINCE 1925

AVERAGES OF VALUES LISTED IN TRADE PUBLICATIONS

